

IIA PROJECT DEADLINE-1 **BIO . SYNC**

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Project Statement:

We are building a platform that allows users to enter the name of a chemical compound and retrieve detailed information about the compound from various reputable databases such as PubChem, ChemBL, and DrugBank. The platform will offer a user-friendly frontend interface that displays the gathered information in a comprehensive and organized manner.

Use Cases of our project:

- **Compound Information Retrieval:** Users can enter the name of a chemical compound or its attributes like smiles or drug IDs they are interested in, and the platform will retrieve and display detailed information about the compound from various databases.
- **Research and Study:** Researchers and students can use the platform to gather comprehensive information about specific compounds for their academic projects, research papers, or studies.
- **Comparison and Analysis:** Users can input multiple compound names to compare and analyze their properties, aiding in decision-making and analysis.

Requirement:

- There is no single data source which could provide all sort of information related to drugs, like their scientific values, effectiveness, use cases, symptoms. This data is spreaded over multiple databases mentioned above.

But when a user and researcher wants to study about it, either they couldn't get all the necessary information or they have to put extra time and efforts to explore the web. This application will be one shot place to all their needs and requirements.

Importance:

- **Efficient Information Access:** The project addresses the need for a centralized platform that streamlines the process of accessing compound information from multiple reputable databases.
- **Research and Innovation:** Access to comprehensive compound information is essential for research and innovation in fields such as drug discovery, material science, and chemical engineering.
- **Data Accuracy:** By aggregating information from reliable sources such as PubChem, ChEMBL, and DrugBank, the platform ensures the accuracy and credibility of the compound details presented to users.

Stakeholders and their purpose:

- **Pharmaceutical Companies and Drug Developers:** Pharmaceutical companies and drug developers can use the platform to gather data on potential drug candidates and compounds of interest for drug discovery efforts.
- **Researchers:** Researchers in the field of chemistry will benefit from the platform as a resource for obtaining compound information for their studies, experiments, and publications.
- **Curious individuals:** Those interested in knowing about specific drug symptoms and for what disease they are most effective.

Data acquisition:

- ChEMBL
- PubChem
- DrugBank

Tech stack: HTML, CSS, Javascript, Python, Django, APIs.